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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,381	11/21/2005	Mark J Childs	GB 020125	3722
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EXAMINER				
MCCOMMAS, STUART S				
ART UNIT		PAPER NUMBER		
4115				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/523,381

Applicant(s)

CHILDS ET AL.

Examiner

STUART MCCOMMAS

Art Unit

4115

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 7 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-85/86)
Paper No(s)/Mail Date 2/7/2007.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 4 and 11 are objected to because of the following informalities: The claims do not specify which of the preceding claims they depend on. Appropriate correction is required.

Claims 6 and 7 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "the plurality of analogue drive levels" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim. For the purpose of prior art rejections, the examiner has replaced "levels" with "currents" in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 and 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Inukai et al. (United States Patent 6,680,577), hereinafter referenced as Inukai.

Regarding claim 1, Inukai discloses an electroluminescent (EL) display device comprising an array of display pixels, each display pixel comprising an EL display element and a current source circuit for driving a current through the EL display element in dependence on a data voltage, wherein the display device is operable in at least first and second phases within each frame period: the first phase having a first duration and during which a first one of a first plurality of analogue drive currents can be driven through the EL display element; and the second phase having a second duration, different to the first duration, and during which a second one of a second plurality of analogue drive currents can be driven through EL display element, wherein the first and second ones of the respective pluralities of analogue drive currents are independently selectable. Specifically Inukai discloses an EL display device 101 including an array of display pixels 104 (figure 1A) where each pixel includes an EL display element 109 and a current source circuit including a transistor 108 and a capacitor 112 (figure 1B) for driving current through the EL display element 109 where the current through the EL display element 109 depends on a data voltage (column 7 lines 45-58), and where the device is operable in several periods within a frame (figures 5A-5F, column 9 lines 29-

36). Inukai further discloses that the first period has a first length and that during the first period a first current of a group of currents can be driven through the EL display element 109 (column 9 lines 21-36; figures 5A-5F). Inukai further discloses that the second period has a length different from the first period (Figure 5A-5F) and that during the second period a second current of a plurality of currents is driven through the EL display element 109 (column 9 lines 21-36) and that the first and second currents of the respective pluralities of drive currents can be selected independently of one another (column 3 lines 61-67; figure 5D).

Regarding claim 2, Inukai discloses everything as applied above (see claim 1), in addition Inukai discloses wherein the first plurality of analogue drive currents comprises a number n of drive current levels including zero, and wherein the duration of one phase is approximately n times the duration of the other phase. Specifically Inukai discloses that the first plurality of drive currents comprises N different levels where N is any number greater than two (figures 5A-5F; column 3 lines 25-40; column 5 lines 38-63) where the current can assume a zero value (column 8 lines 51-55). Inukai further discloses that the duration of one period is approximately N times the duration of the other phase (figures 5A-5F; column 3 lines 25-40).

Regarding claim 3, Inukai discloses everything as applied above (see claim 2), further Inukai discloses wherein n is 8. Specifically Inukai discloses N can be any integer greater than or equal to two (column 5 lines 38-53).

Regarding claim 4, Inukai discloses everything as applied above (see claim 1-3), in addition Inukai discloses wherein the first plurality of analogue drive currents is the

same as the second plurality of analogue drive currents. Specifically Inukai discloses that the gradation of a pixel is controlled by current where the display period is selected from a group of display periods corresponding to the current and a second display period is selected from the same group of display periods (column 3 lines 41-67; figure 5A-5F).

Regarding claim 5, Inukai discloses everything as applied above (see claim 1-3), in addition Inukai discloses wherein the first plurality of analogue drive currents comprises a first number n of drive current levels for providing the lowest n non-zero brightness levels, and the second plurality of analogue drive currents comprises a second number m of non-zero drive current levels for providing the highest m brightness levels, where $n+m$ is the total number of brightness levels. Specifically Inukai discloses that a first three bits (D4-D6) of a digital analog drive current value are used to provide the lowest nonzero brightness levels excluding zero brightness and that a second three bits (D1-D3) can be used for controlling the highest brightness levels of a display to provide six combined brightness levels (column 3 lines 25-60; figures 5A-5C).

Regarding claims 8-12, they disclose a **method** for implementing the **apparatus** of claims 1-5. Thus, claims 8-12 are an inherent variation of claims 1-5 and are interpreted and rejected for the same reasons as stated above (see claims 1-5).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STUART MCCOMMAS whose telephone number is

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(571)270-3568. The examiner can normally be reached on Monday-Friday (7:30-5:00 EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jefferey Harold can be reached on 571-272-7519. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stuart McCommas
Examiner
Art Unit 4115

SSM

/Jefferey F Harold/

Supervisory Patent Examiner, Art Unit 4115